



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,243	10/11/2000	Subir Varma	164.1012.01	7835
22883	7590	01/21/2004	EXAMINER	
SWERNOFSKY LAW GROUP PC P.O. BOX 390013 MOUNTAIN VIEW, CA 94039-0013			LAM, DANIEL K	
			ART UNIT	PAPER NUMBER
			2667	

DATE MAILED: 01/21/2004

7

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/689,243

Applicant(s)

VARMA, SUBIR

Examiner

Daniel K Lam

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

*Specification*

1. The title of the invention, "Contention Control with State Machine", is not descriptive. It contains two broad areas, namely, Contention Control and State Machine, and does not include any indication being claimed by the applicant as his invention.

A new title is required that should clearly indicate of the invention to which the claims are directed.

*Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-6 and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,529,520 issued to Lee et al. in view of U. S. Pat. No. 5,956,338 issued to Ghaibeh.

Regarding claims 1 and 9, Lee et al. discloses a method and a customer premises equipment of controlling a contention state for a communication link between a base

station controller and customer premises equipment in point-to-multipoint communication, comprising the step of

- Controlling the contention state using a state machine (claim 1). See fig. 2 references 38 and CONTENTION, col. 10, lines 44 to 51.

However, he does not disclose:

- The state machine including, a grant pending absent state in which the customer premises equipment is polled with a unicast request slot, wherein during the grant pending absent state, the customer premises equipment sends no upstream data to the base station controller but can use the unicast request slot to request a data slot for sending upstream data to the base station controller (claims 1 and 9).
- The customer premises equipment has a transceiver (claim 9).
- The customer premises equipment has a controller that controls a contention state for communicating over the communication link via the transceiver the controller using a state machine for controlling the contention state, the state machine including a grant pending absent state in which the customer premises equipment is polled with a unicast request slot, wherein during the grant pending absent state, the customer premises equipment sends no upstream data to the base station controller but can use the unicast request slot to request a data slot for sending upstream data to the base station controller (claim 9).

Ghaibeh discloses:

- A state machine including, a grant pending absent state in which the customer premises equipment is polled with a unicast request slot, wherein during the grant

pending absent state, the customer premises equipment sends no upstream data to the base station controller but can use the unicast request slot to request a data slot for sending upstream data to the base station controller. See fig. 13 references 58, 220, and 222, and col. 10, lines 42-49.

- The customer premises equipment has a transceiver. See fig. 1 references 26 and MODEM, and col. 5, lines 3 to 20.
- The customer premises equipment has a controller using the state machine. See fig. 1 references 38 and MAC.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to incorporate a grant pending absent state into the contention state machine so that the data communication network can dynamically, adaptively, and simultaneously supporting multiple types of data traffic, including CBR traffic as taught by Ghaibeh. See col. 2, lines 50 to 58.

Regarding claims 2 and 10, in addition to disclose the limitation regarding claims 1 and 9, Lee et al. further discloses the state machine further includes an idle state in which the customer premises equipment awaits arrival of data packets to send as upstream data to the base station controller. See fig. 2 references 30 and IDLE, and col. 10, lines 19 to 24.

Regarding claims 3 and 11, in addition to disclose the limitation regarding claims 2 and 10, Lee et al. further discloses the state machine further includes a deferring state in which the customer premises equipment requests grant of a data slot for sending

upstream traffic to the base station controller and if necessary defers contending for the data slot so as to avoid collisions with other customer premises equipment. See fig. 2 references 50 and BACKOFF, and col. 10, lines 34 to 40.

Regarding claims 4 and 12, in addition to disclose the limitation regarding claims 3 and 11, Lee et al. further discloses the state machine further includes a grant pending state in which the customer premises equipment awaits and receives grant of the data slot for sending upstream data to the base station controller and sends upstream data to the base station controller after grant of the data slot. See fig. 2 references 42 and GRANT PENDING, and col. 10, lines 44 to 51.

Regarding claims 5 and 13, in addition to disclose the limitation regarding claims 4 and 12, Lee et al. further discloses in the grant pending state, the customer premises equipment uses piggybacking to request grant of a next data slot while sending upstream data to the base station controller. See fig. 2 references PARTIAL GRANT and PIGGYBACKING, and col. 10, lines 60 to 64.

Regarding claims 6 and 14, in addition to disclose the limitation regarding claim 5 and 12, Lee et al. further discloses the state machine enters the deferring state upon arrival of data packets to send as upstream data to the base station controller, wherein:

- The state machine enters the grant pending state after the deferring state, returns to the deferring state if a collision occurs, and remains in the grant pending state when

sending upstream data to the base station controller with piggybacking. See fig. 2 references 38, 42, 50, CONTENTION, GRANT PENDING, and BACKOFF.

- The state machine enters the grant pending absent state after the customer premises equipment has sent upstream data to the base station controller in the grant pending state. See Ghaibeh fig. 13 references 58, 220, and 222, and col. 10, lines 42-49.

4. Claims 7, 8, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Pat. No. 6,529,520 issued to Lee et al. in view of U. S. Pat. No. 5,956,338 issued to Ghaibeh in further view of "Cable modem Standards for Advanced Quality of Service Deployments", written by Quigley.

Regarding claims 7 and 15, in disclosing the limitations regarding claims 6 and 14, Lee et al. and Ghaibeh do not disclose the limitation that the state machine further includes an unsolicited grant pending state in which the customer premises equipment receives grant of the data slot for sending upstream data to the base station controller and sends upstream data to the base station controller after grant of the data slot, without having requested the data slot.

Quigley discloses the state machine further includes an unsolicited grant pending state in which the customer premises equipment receives grant of the data slot for sending upstream data to the base station controller and sends upstream data to the base station controller after grant of the data slot, without having requested the data slot. See pages 18 and 19, and reference Unsolicited Grants.

Therefore, it would have been obvious to those having ordinary skill in the art, at the time of invention, to incorporate unsolicited grant pending state into the state machine in order to allow dedicated bandwidth to be assigned by the base station controller without recurring request and grant overheads as taught by Quigley. See page 14, lines 5 to 6, Unsolicited Grant Service (UGS) section.

Regarding claims 8 and 16, in addition to disclose the limitation regarding claims 7 and 15, Ghaibeh further discloses the state machine further includes an unsolicited grant pending absent state in which the customer premises equipment is polled with the unicast request slot, wherein, during the unsolicited grant pending absent state, the customer premises equipment sends no upstream data to the base station controller but can use the unicast request slot to request the data slot for sending upstream data to the base station controller, and enters the unsolicited grant pending absent state after the customer premises equipment has sent upstream data to the base station controller in the unsolicited grant pending state. See Ghaibeh fig. 13 references 58, 220, and 222, and col. 10, lines 42-49.

Art Unit: 2667

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel K. Lam whose telephone number is (703) 305-8605. The examiner can normally be reached on Monday-Friday from 8:30 AM to 4:30 PM.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-4700.

DKL *dkl*  
January 12, 2004

*Chau T. Nguyen*

CHAU NGUYEN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600